



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/214,708 01/11/99 ITANO

M XI/P6217USO

EXAMINER

SMETANA, J

ART UNIT

PAPER NUMBER

~~1746~~

DATE MAILED:

11/08/00

000881
LARSON & TAYLOR, PLC
1199 NORTH FAIRFAX STREET
SUITE 900
ALEXANDRIA VA 22314

IM22/1108

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/214,708

Applicant(s)

ITANO, MITSUSHI

Examiner

Jiri F. Smetana

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 3, 4, 8, and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-7, and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some * c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
2. ☐ received in Application No. (Series Code / Serial Number) _____.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
Page 1, line 11, "atomospheric" should be replaced with --atmospheric--.
Page 3, line 8, "gasses" should be replaced with --gases--.
Appropriate correction is required.

Claim Objections

2. The present Office practice is to insist that each claim must be the object of a sentence starting with "I claim", "We claim", "The invention claimed is", or the equivalent. The claims commencing on page 5 fail to include this language.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, and 5 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Babacz, U.S. Pat. No. 5,234,723.

The claimed invention reads on Babacz as follows: Babacz discloses a gaseous mixture of CF₃CFCF₂ (hexafluorpropylene) and oxygen, nitrogen, or any noble gases (column 5, lines 65-68; column 6, lines 1-13).

The elements in the claims are read in the reference.

Art Unit: 1746

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6, 7, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gabric et al., U.S. Pat. No. 5,281,302, ~~and *in view of*~~ in view of Sony Corp., JP 04-346428.

Gabric discloses a chamber cleaning method by treating a plasma CVD chamber of a semiconductor production device with a gaseous mixture of at least one fluorinated carbon, or any other similar fluorine containing gases (column 2, lines 3-5), and oxygen (column 2, lines 27-44).

Gabric does not disclose the use of CF_3CFCF_2 gas.

Sony Corp. discloses the use of CF_3CFCF_2 unsaturated gas (column 7, line 46).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to claim a method as disclosed in Gabric in combination with Sony Corp. because Sony Corp. teaches that dry etching in the preparation of semiconductor devices with a variation of unsaturated gases with the basic formula of C_xF_y , where $x=2$ or more and $y=2x$ or less, but preferably CF_3CFCF_2 (hexafluoropropylene) gas, because the type and number of bonds are not specifically limited and may be tailored to desired etching results (column 5, lines 30-50).

Other Relevant Prior Art

Senoue et al., U.S. Pat. No. 4,581,101, discloses a dry etching and cleaning process in dry etching under the action of a gas composed essentially of fluorinated ether and argon. Senoue, however, does not disclose the use of CF_3CFCF_2 as a cleaning gas.

Isamu, JP 08-291299A, cited in the international search report, discloses a cleaning gas comprising a perfluorocarbon containing a hetero-atom capable of removing deposits from a CVD process. Isamu, however, does not disclose with specificity of using CF_3CFCF_2 as a possible cleaning gas.

Conclusion

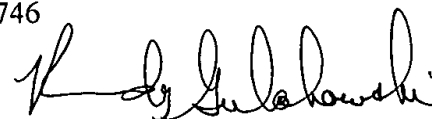
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jiri F. Smetana whose telephone number is (703)605-1173. The examiner can normally be reached on Monday-Friday (7:30am-4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (703)608-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-7718 for regular communications and (703)305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

Jiri F. Smetana
Patent Examiner
Art Unit 1746

JFS
October 31, 2000



RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700